

United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

**Wildlife
Services**

FY 2004

Management of Blackbird Damage to Rice

Contact Information:

John Cummings, Wildlife Services Research Wildlife Biologist

NWRC Headquarters

4101 LaPorte Avenue

Fort Collins, CO 80521

Phone: (970) 266-6131 FAX: (970) 266-6138

E-mail: john.l.cummings@aphis.usda.gov

Web site: www.aphis.usda.gov/ws/nwrc

National Wildlife Research Center Scientists Address Blackbird Damage to Rice

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research facility devoted exclusively to resolving conflicts between people and wildlife through the development of effective, selective, and acceptable methods, tools, and techniques.

Blackbirds, specifically red-winged blackbirds, common grackles, and brown-headed cowbirds, cause extensive damage to newly planted rice and ripening rice. Blackbird damage to rice crops has received much attention in States such as Louisiana, Texas, California, Arkansas, Mississippi and Missouri. Considerable public interest now exists to find better management methods to reduce damage caused by blackbirds.

NWRC's research focuses on reducing bird damage to rice and improving profitability for growers. To achieve these goals, NWRC must develop new or improved management techniques and strategies while expanding partnerships between rice producers, rice commodity groups, rice research boards, universities, and local,



State and Federal agencies. NWRC researchers are currently looking at the status of blackbird populations in southern rice-growing States. In addition, researchers are developing a bird repellent for use on rice, and creating new strategies and tools to manage bird damage to rice.

Applying Science and Expertise to Wildlife Challenges

Economic Assessment of Damage—A recent survey of rice producers indicated that blackbirds caused over \$13.5 million in damage to rice in Louisiana, Arkansas, Texas, California, and Missouri during the 2001 crop year. Indirect economic losses, such as the cost of bird control devices and losses from government subsidy programs, were estimated at \$3.4 million. Survey results will help determine the direction damage management and research should move in the future.

Chemical Repellents—NWRC scientists conducted a series of laboratory and field tests to identify, develop, and evaluate potential chemical repellents for reducing bird damage to newly-planted and ripening rice. Registration of a chemical repellent for seeded or headed rice could have a major impact on reducing damage losses and environmental hazards and increasing profitability.

DRC-1339 Baiting—NWRC scientists conducted DRC-1339 dose response and dietary toxicity tests on blackbirds; evaluated non-target species hazards of DRC-1339 in Louisiana, Missouri and Texas; and completed a DRC-1339 confined rotational crop study. The

• • • • •
Major Research Accomplishments:

- WS completed a rice producer survey of blackbird damage to rice in Louisiana, Arkansas, Missouri, California and Texas.
- WS evaluated the efficacy of Aza-Direct, GG-orange terpene, caffeine and GWN-4770 as potential blackbird repellents for use on rice seed and ripening rice to reduce blackbird damage.
- WS evaluated alternative baiting strategies for the effective and safe delivery of DRC-1339, a toxicant for the control of depredating blackbird populations.
- WS determined DRC-1339 dietary effects on several species of non-target birds.
- WS determined blackbird response to several concentrations of DRC-1339.
- WS determined residue levels of DRC-1339 in soil and plants following applications of the bait for blackbird control.
- WS determined the potential hazards of DRC-1339 to non-target bird species.
- WS determined the movements and distribution of blackbird populations causing damage to rice crops in Missouri.

results of these studies were used to support registration issues for DRC-1339 and improve WS baiting methodology. A study of the potential hazard of DRC-1339 showed that hazards were minimal to non-target birds using bait sites. Research continues on developing new and improved DRC-1339 bait formulations and a model to estimate the take of target birds from WS' blackbird/DRC-1339 baiting program in Louisiana and Texas. This research will assist rice producers looking for new tools and strategies to manage blackbird damage.

Groups Affected by This Problem:

- Rice producers
- Consumers of rice products
- Processors, manufacturers, suppliers and sellers of rice products
- Other crop farmers

Major Cooperators:

- Louisiana Rice Research Board
- Louisiana Rice Foundation
- Louisiana Blackbird Committee
- USA Rice Federation
- Louisiana Rice Research Station
- Missouri Rice Research Station
- Gowan Company
- Syngenta Chemical Company

Selected Publications:

- Avery, M. L.; Cummings, J. L. 2003. Chemical repellents for reducing crop damage by blackbirds. In: Linz, G. M., ed. Management of North American blackbirds. Proceedings of a special symposium of the Wildlife Society 9th annual conference. 27 September 2002; Bismarck, ND. Fort Collins, CO: U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center: 41-48.
- Cummings, J. L.; Avery, M. L. 2003. An overview of blackbird research in the southern rice growing region of the United States. In: Fagerstone, K. A.; Witmer, G. W., eds. Proceedings of the 10th Wildlife Damage Management Conference. 6-9 April 2003; Hot Springs, AR. Fort Collins, CO: The Wildlife Damage Management Working Group of The Wildlife Society: 237-243.
- Cummings, J. L.; York, D. L.; Shively, K. J.; Pipas, P. A.; Stahl, R. S.; Davis, J. E. 2003. Dietary toxicity test for 2% DRC-1339 treated brown rice on non-target avian species. In: Linz, G. M., ed. Management of North American blackbirds. Proceedings of a special symposium of the Wildlife Society 9th annual conference. 27 September 2002; Bismarck, ND. Fort Collins, CO: U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center: 79-84.
- Cummings, J.L.; Glahn, J. F.; Allen Wilson, E.; Davis, Jr., J. E. 2002. Potential hazards of DRC-1339 treated rice to non-target birds when used at roost staging areas in Louisiana to reduce local populations of depredating blackbirds. *International Biodeterioration and Biodegradation* (49):185-188.
- Cummings, J.L.; Pochop, P. A.; Engeman, R. M.; Davis Jr., J. E.; Primus, T. M. 2002. Evaluation of Flight Control to reduce blackbird damage to newly planted rice in Louisiana. *International Biodeterioration & Biodegradation* 49:169-173.
- Cummings, J. L.; Avery, M. L.; Mathre, O.; Allen Wilson, E.; York, D. L.; Engeman, R. M.; Pochop, P. A.; Davis, J. E. 2002. Field evaluation of Flight Control to reduce blackbird damage to newly planted rice. *Wildlife Society Bulletin* 30:816-820.
- Glahn, J. F.; Avery, M. L. 2001. Estimation of red-winged blackbird mortality from toxic bait application. Pages 109-118 in J.J. Johnston, editor. *Pesticides and Wildlife*. American Chemical Society Symposium Series 771. American Chemical Society, Washington, D.C.
- Avery, M. L.; Tillman, E. A.; Humphrey, J. S.; Cummings, J. L.; York, D. L.; Davis, Jr., J. E. 2000. Evaluation of overspraying as an alternative to seed treatment for application of flight control bird repellent to newly planted rice. *Crop Protection* 19:225-230.
- Avery, M. L.; Whisson, D. A.; Marcum, D. B. 2000. Responses of blackbirds to mature wild rice treated with flight control bird repellent. In: Fagerstone, K. A.; Witmer, G. W., eds. Proceedings of the 10th wildlife damage management conference; 6-9 April 2003; Hot Springs, AR. Fort Collins, CO: The Wildlife Damage Management Working Group of The Wildlife Society: 26-30.